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Complete Specification
 entitled ⁽⁵⁴⁾ AN INVENTION RELATING TO ROOF TILING

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Convention Priority ⁽³⁰⁾ -

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Related Art ⁽⁵⁶⁾

The following statement is a full description of this invention, including the best method of performing it known to me:

The present invention relates to roof tiling and a new tile, and means for securing the roof tile in a building operation.

In the past tiles have usually been mounted on a roof by driving special nails through the tiles and into a timber frame, or alternatively by relying upon the weight of the tile to secure it on the roof and to the adjacent rows of tiles which partially overlap. A cheaper alternative has been to construct a roof from large sheets of material, for example, from corrugated iron or asbestos material, but such a structure has an undesirable appearance.

According to a first aspect of the present invention, there is provided a roof tile for use on a roof, the tile being of asbestos-cement material and comprising a portion for receiving securing means which passes into the tile to secure the tile to supporting means, a first edge portion extending along at least a part of one side of the tile, and a second edge portion extending along at least a part of an opposite side of the tile, said first edge portion being provided with engagement means such that the tile can be mounted on the supporting means by engaging the engagement means of said first edge portion with a corresponding engagement means arranged in association with the second edge portion of a similar tile which has already been secured on the supporting means, said first edge portion at least partially overlying said second edge portion of the similar tile.

In one embodiment, movement of the first-mentioned tile in a direction perpendicular to the general plane of the tile can be limited by suitable design of the tile.

Claims 3-6 of the claims at the end of the specification set forth optional or preferred features which may be associated with the present invention.

The tile preferably includes corrugated portions, the corrugations preferably running perpendicular to said edge portion when the tile is rectangular.

In one embodiment, the first edge portion provides a lip extending out of the general plane of the tile and the second edge portion provides a lip extending out of the general plane of the tile and a portion extending from the lip in a direction substantially parallel to the general plane of the tile, such that a tile is arranged to be mounted on the supporting means by engaging the first edge portion of a tile with the second edge portion of a similar tile which has already been mounted on the supporting means, the first edge portion at least partially overlying said second edge portion of the similar tile so that movement of the tile in a direction perpendicular to the edge portions in the general plane of the tile and away from said similar tile is prevented.

The tile is preferably rectangular and at one side has a third edge portion and at an opposite side a fourth edge portion extending between the first and second edge portions, the third edge portion being provided with an engagement surface for engaging below the fourth edge

portion of a similar tile placed adjacent thereto with the fourth edge portion of the similar tile overlying said third edge portion.

The securing means is preferably a nail which is driven downwardly through a tile and into the supporting means which can be a timber beam or batten.

The nail may provide said corresponding engagement means.

According to a second aspect of the present invention, there is provided a method of roofing using tiles as described with reference to the first aspect of the invention.

Surprisingly, the present inventor has established that a tile made of asbestos-cement can be produced, thereby making use of the lightness and strength of the material.

A tile according to the present invention can be some six times as large as a normal tile yet provide the desired visual affect; thus an acceptable tile of large area can be produced thereby permitting rapid and economic installation.

A roof structure having tiles according to the invention can be of relatively low pitch, even as low as 7° where a preferred form of the invention providing a weatherproof joint is provided.

The invention will be further described, by way of example, with reference to the accompanying drawings, of which:-

Figure 1 is an isometric view illustrating a pair of tiles in accordance with a first embodiment of the invention;

Figure 2 is a sectional side view taken along the line II-II of Figure 1;

Figure 3 is an isometric view of tiles according to a second embodiment of the invention; and

Figure 4 is a sectional side view taken along the line IV-IV of Figure 3.

Throughout the drawings like parts are given like reference numerals.

Referring to Figures 1 and 2, a tile 1 has a rectangular form and an overall size of approximately 72" by 14". The tile is formed from asbestos cement by rolling, the upper surface of the tile being hand finished. After curing in an autoclave, the tile is sanded and the upper surface can be coloured as desired.

The tile 1 comprises a main sheet 2 which has corrugations 3 extending across it to provide strength and an upwardly curved lip 4 at its left hand end as shown in Figure 1, while its right hand end terminates at the end of a corrugation 3 so that the right hand end of another tile placed adjacent the left hand end lip 4 overlies the lip and mates therewith to provide a substantially weatherproof joint.

At a first edge portion of the main sheet 1, a lip 5 is formed, the lip being formed from three strips of asbestos cement 6, 7, 8 which lay over one another and are secured together with the main sheet 1 by glueing and rivets 9. The middle of the three strips 7 has a smaller width than the two strips 6, 8 on either side thereof so as to provide a recess to form engagement means for receiving corresponding engagement means in the form of a

projection associated with a similar tile over which the lip 5 lies.

As shown in Figure 2, a first tile 1' is mounted on a timber batten 11 of a roof structure by means of a special galvanised iron nail 16' of the form illustrated which is hammered downwardly through the tile 1' and into the timber batten 11. The nail includes an elongated body portion or shaft 12, a head 13 which is first brought into abutment to the upper surface of the tile 1' and an extension comprising a first arm 14 and a second arm 15 which provides the corresponding engagement means which is arranged to be associated with the edge of a second tile 1".

The second tile 1" having the features of the tile 1 shown in Figure 1 is mounted on the roof structure by moving the tile generally in the direction of arrow A shown in Figure 2, so as to engage the second arm 15 of the nail in the recess in the lip 5 of the tile. Thus, movement of the tile in the direction of arrow A, and in a direction perpendicular to the face of the tiles is limited. The second tile 1" is secured by hammering a second nail 16" over an opposite edge portion of the tile and into a timber beam 17.

Referring now to Figures 3 and 4, the tiles are generally similar to the tiles shown in Figures 1 and 2 except that the edge portions by which the tiles inter-engage are different.

The front edge of tile 20 is a downwardly extending

lip 21 extending perpendicular to the general plane of the tile, whereas at the opposite side edge there is provided a lip comprising an upwardly extending portion 22 extending perpendicular to the plane of the tile and a second portion 23 extending horizontally in the plane of the tile. The tiles are arranged to be secured to timber batten 24 in a similar manner to that described above with reference to Figures 1 and 2, galvanised nails 26 being used.

The tile 20 is mounted on the timber batten 24 which engages in the recess formed between the portions 22 and 23. A second tile 20" is then mounted with its front edge portion 21' overlapping the portion 22 with the inside of the front edge part of the tile resting on the lip portion 23. The tile edge is then secured by driving the nail 26 vertically downwardly through both tiles as shown in Figure 4 or alternatively by arranging the nail horizontally as illustrated by nail 27 in Figure 3.

For the purpose of strengthening the tile and preventing cracking along the bends on the tile, at the edges providing the lips, the inside of each bend is rounded.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A roof tile for use on a roof, the tile being of asbestos-cement material and comprising a portion for receiving securing means which passes into the tile to secure the tile to supporting means, a first edge portion extending along at least a part of one side of the tile, and a second edge portion extending along at least a part of an opposite side of the tile, said first edge portion being provided with engagement means such that the tile can be mounted on the supporting means by engaging the engagement means of said first edge portion with a corresponding engagement means arranged in association with the second edge portion of a similar tile which has already been secured on the supporting means, said first edge portion at least partially overlying said second edge portion of the similar tile.

In one embodiment, movement of the first-mentioned tile in a direction perpendicular to the general plane of the tile can be limited by suitable design of the tile.

2. A roof tile as claimed in Claim 1, wherein said first and second edge portions are formed such that when adjacent tiles interengage, the tile whose first edge portion partially overlies the second edge portion of the adjacent tile has its movement in a direction perpendicular to the general plane of the tile limited.

3. A roof tile as claimed in Claim 1 or Claim 2, wherein the engagement means of the first edge portion of a tile is provided by a recess in the edge portion for receiving

a corresponding projection which provides the corresponding engagement means.

4. A roof tile as claimed in Claim 3, wherein the first edge portion includes a lip extending perpendicular at the edge of and from the main surface of the tile, the recess being provided in the lip.

5. A roof tile as claimed in Claim 4, wherein the recess is in the face of the lip on the opposite side of the lip from the edge of the tile.

6. A roof tile as claimed in Claim 4 of Claim 5, wherein the lip is formed by securing together a plurality of members which co-operate when secured together to form the recess.

7. A roof tile as claimed in Claim 1, wherein the first edge portion provides a lip extending out of the general plane of the tile and the second edge portion provides a lip extending out of the general plane of the tile and a portion extending from the lip in a direction substantially parallel to the general plane of the tile, such that a tile is arranged to be mounted on the supporting means by engaging the first edge portion of a tile with the second edge portion of a similar tile which has already been mounted on the supporting means, the first edge portion at least partially overlying said second edge portion of the similar tile so that movement of the tile in a direction perpendicular to the edge portions in the general plane of the tile and away from said similar tile is prevented.

8. A roof tile as claimed in any one of the preceding

claims, wherein the tile is rectangular and at one side has a third edge portion and at an opposite side a fourth edge portion extending between the first and second edge portions, the third edge portion being provided with an engagement surface for engaging below the fourth edge portion of a similar tile placed adjacent thereto with the fourth edge portion of the similar tile overlying said third edge portion.

9. A roof tile as claimed in any one of the preceding claims, wherein said first and second edge portions extend along substantially the whole of their respective sides.

10. A method of roofing comprising using tiles according to any one of the preceding claims, the engagement means of the first edge portion of a first tile being engaged with the second edge portion of a second tile which has already been secured by securing means to a roof structure such that the first and second tiles partially overlap.

11. A method as claimed in Claim 10, wherein the securing means comprises a nail driven through at least one of the tiles into a supporting batten.

12. A method of roofing or a roof tile substantially as herein described with reference to Figures 1 and 2, or Figures 3 and 4 of the accompanying drawings.

13. A roof structure of relatively low pitch comprising roof tiles as claimed in any one of Claims 1-9 and 13.

Dated this 9th day of August, 1972.
JAMES FREDERICK BRIGGS
By this Patent Attorney:



OF GRIFFITH, HASSEL & FRAZER.

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FIG. 1

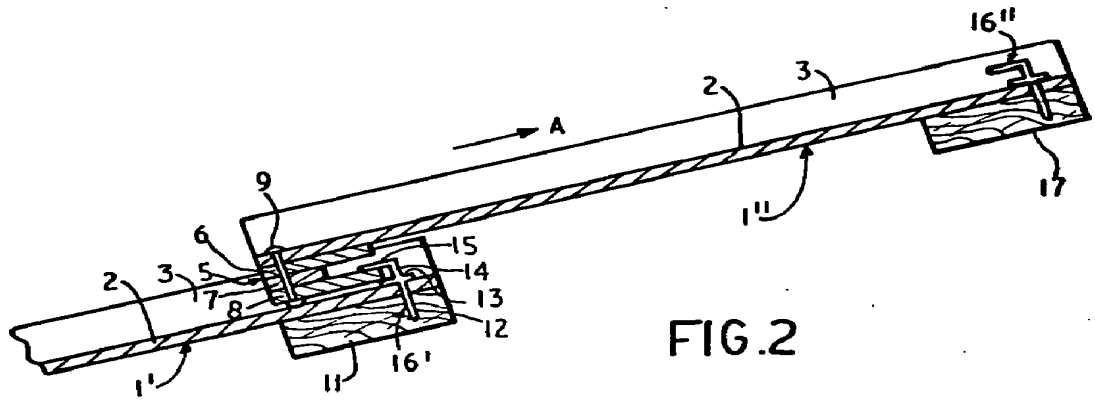
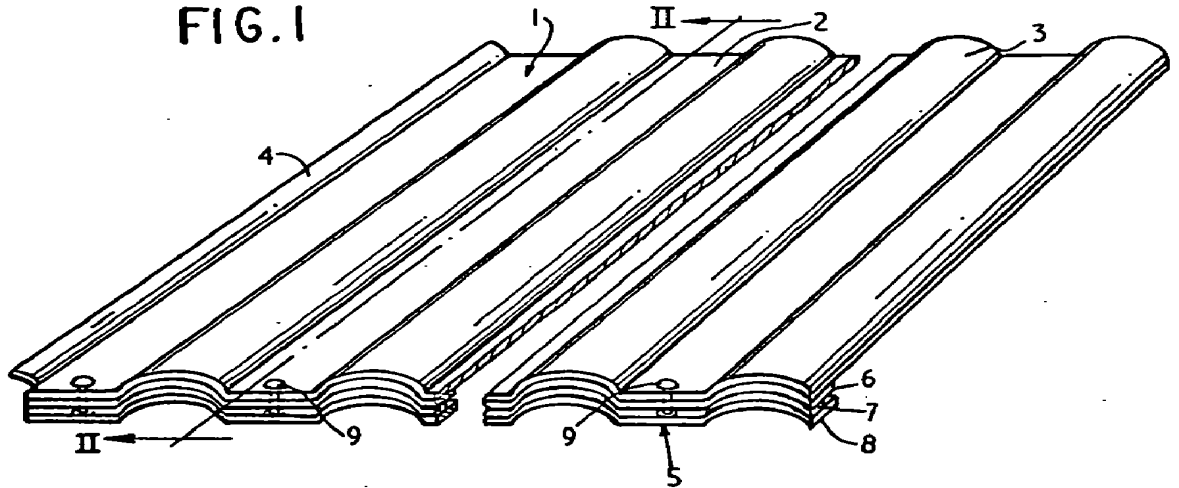
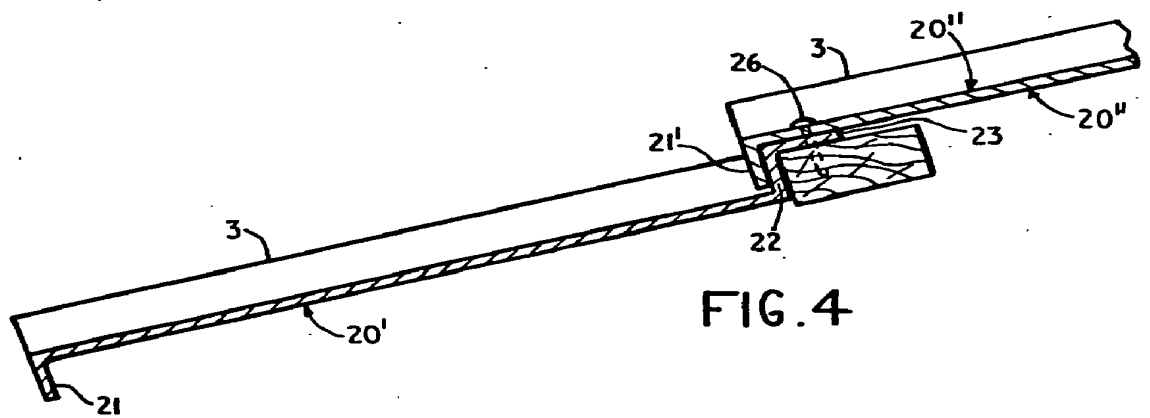
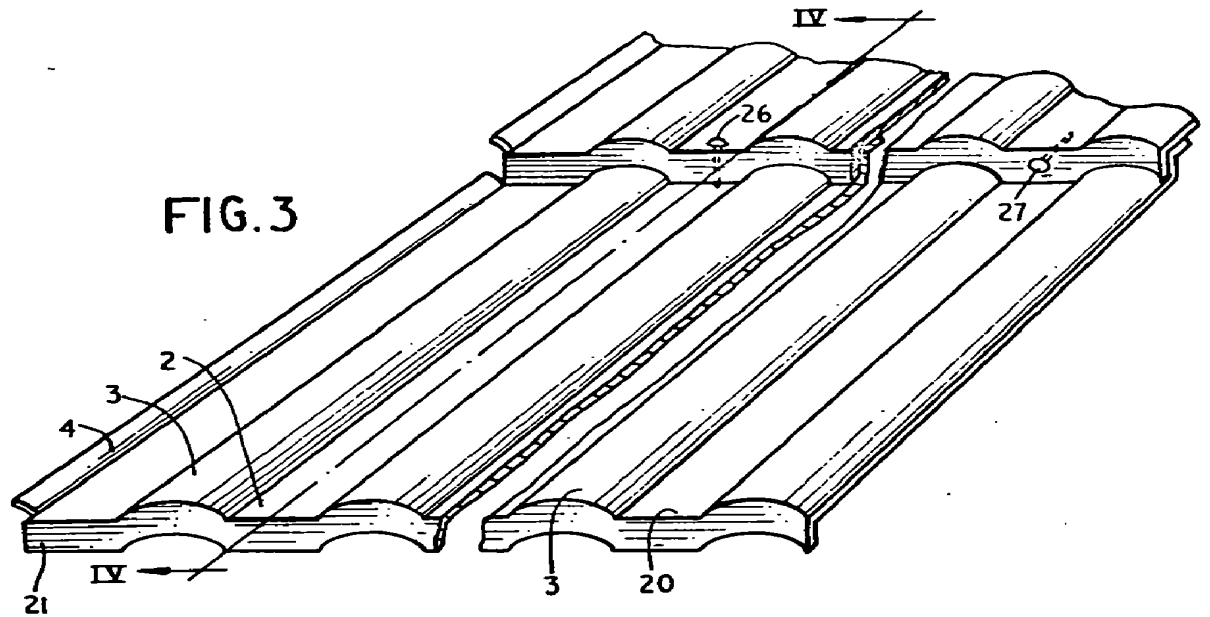


FIG. 2

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